ORIGINAL

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Revision of the Commission's Rules	)	CC Docket No. 94-102
to Ensure Compatibility with Enhanced	)	
911 Emergency Calling Systems	)	
	)	
Cingular Wireless LLC	)	DA 98-2631
Request for Waiver of Section 20.18(f)	)	
of the Commission's Rules	)	

To: Wireless Telecommunications Bureau

PETITION FOR LIMITED WAIVER OF SECTION 20.18(f)

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SUMMARY

Cingular Wireless LLC ("Cingular") hereby requests a waiver of the Phase II enhanced 911 ("E911") deployment obligations contained in Section 20.18(f) for its TDMA/AMPS networks. Cingular fully recognizes the vital need for E911 service and has committed substantial resources to its deployment. The proposed waiver would authorize Cingular to deploy TruePosition's network-based technology in its TDMA/AMPS markets. The vendor has guaranteed that its solution will meet the FCC's accuracy requirements. TruePosition also has committed to deploying its solution on 2,000 of Cingular's TDMA/AMPS cell sites in 2002, which should be sufficient to satisfy all valid, outstanding PSAP requests for Phase II information. From that point forward, Cingular will be capable of deploying its Phase II solution in its TDMA/AMPS markets in accordance with the FCC rules — within six months of a valid PSAP request. TruePosition's solution will give Cingular the capability to be fully deployed on Cingular's TDMA/AMPS networks by late fourth quarter 2004/early first quarter 2005, dependent upon PSAP requests. Cingular expects that public safety organizations will assist it in prioritizing outstanding requests for Phase II information. Cingular has not tested the current version of TruePosition's technology on a TDMA/AMPS network, however, and will be unable to do so without additional delay. Accordingly, contingent enforcement relief is sought in the event TruePosition's accuracy and deployment commitments cannot be met.

The Commission envisioned that technologies would develop in time to satisfy its Phase II E911 rules. Although many vendors claim they have compliant solutions, none of these claims have proven true in real-world testing. Moreover, even if a technology did exist that could supply compliant Phase II information, it could not be implemented without some sort of modification or upgrade of switches. All of Cingular's switch vendors have indicated that these modifications/upgrades will not be available until well after October 1, 2001. Virtually every other major CMRS carrier has reached a similar conclusion — regardless of air interface — and has sought, or plans on seeking, an E911 waiver. Thus, the rule cannot currently be satisfied. Under these circumstances, the Commission should grant relief where reasonable/good faith attempts are made to implement E911 service based on vendor representations.

Cingular's E911 efforts certainly satisfy this standard. Since early 1996, Cingular and its parents have:

- worked extensively with PSAPs to timely implement Phase I solutions;
- issued RFIs and RFQs to vendors, manufacturers, and organizations involved in the E911 process in an attempt to identify viable Phase II solutions;
- actively worked to develop the standards that are a necessary pre-condition to the provision of Phase II location information;

- conducted or participated in extensive field trials of every different type of location technology available for the GSM and TDMA air interfaces; and
- devoted considerable personnel and internal resources to identify a compliant Phase II solution.

These efforts were unable to identify a technical solution that would satisfy the Commission's Phase II accuracy requirements.

The public interest will be served by a grant of this waiver because the network-based solution will supply location information for TDMA subscribers, analog subscribers, and roamers. No other type of technology can supply location information to these three types of callers.

TABLE OF CONTENTS

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In the Matter of	)	
	)	
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To: Wireless Telecommunications Bureau

PETITION FOR LIMITED WAIVER OF SECTION 20.18(f)

Cingular Wireless LLC ("Cingular"), on behalf of its subsidiaries[1] and pursuant to Sections 1.3 and 1.925 of the Commission's rules,[2] hereby requests a limited waiver of the Phase II enhanced 911 ("E911") obligations set forth in Section 20.18(f).[3] Cingular seeks authorization to deploy a network-based location technology based on the representations of the vendor — TruePosition — that the technology will satisfy the FCC's accuracy requirements in Cingular's TDMA/AMPS markets. Moreover, the network-based solution will provide location information for TDMA callers, analog

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[1] A list of the companies covered by this waiver request is attached. *See* Attachment A. Throughout this filing, the term Cingular is used to refer to Cingular, its predecessors-in-interest, subsidiaries, and affiliates.

[2] 47 C.F.R. §§ 1.3, 1.925.

[3] On July 6, 2001, Cingular filed a Phase II waiver request that would permit it to deploy an E-OTD solution over its GSM networks. *See* "WTB Seeks Comment on Wireless E911 Phase II Waiver Request Filed By Cingular Wireless, LLC," *Public Notice*, DA 01-1628 (July 11, 2001).

callers, and roamers. No other technology is capable of supplying location information to these three groups of callers. A waiver is necessary, however, to insulate Cingular from enforcement action should the technology not comply with the Commission's rules and because the technology cannot be deployed prior to the October 1, 2001 implementation benchmark. For the reasons set forth herein, good cause is shown for the waiver.

I. WAIVERS OF SECTION 20.18 MUST BE GRANTED TO TDMA CARRIERS WHO ACT IN GOOD FAITH TO IMPLEMENT A PHASE II E911 SOLUTION BECAUSE IT IS IMPOSSIBLE TO FULLY COMPLY WITH THE RULE

A. The Phase II Accuracy Requirements Were Adopted Based On The Belief That Compliant Location Technologies Existed Or Would Develop Prior To October 1, 2001

In 1996, the Commission adopted rules to ensure the availability of 911 services via wireless handsets.[4] Because of the transient nature of wireless callers, the Commission required commercial mobile radio service ("CMRS") licensees ("covered carriers") to provide the location of 911 callers to public safety answering points ("PSAPs"). Sections 20.18(e)-(h) of the Commission's rules require that covered carriers deploy a technology for supplying Phase II location information (*i.e.*, latitude/longitude) for 911 calls as early as October 1, 2001. The accuracy specified for Phase II location information varies depending upon the type of technology solution deployed. For network-

[4] *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, *First Report and Order and Further Notice of Proposed Rulemaking*, 11 F.C.C.R. 18676, 18712 (1996).

based solutions (including switch-based solutions), the Commission's rules require accuracies of 100 meters for 67 percent of calls; 300 meters for 95 percent of calls.[5]

At the time these rules were adopted, no technology existed that could actually meet the FCC's requirements for accuracy and implementation.[6] Vendors generally claimed that their technologies were capable of fully satisfying the rules, whereas wireless carriers and some manufacturers expressed considerable doubt. Wireless carriers urged the Commission to refrain from setting accuracy requirements and implementation deadlines until vendor claims could be substantiated and field tested. The Commission adopted accuracy requirements and implementation deadlines, however, because a "5-year implementation schedule for ALI technology allow[s] adequate time to develop" the necessary Phase II solutions.[7]

The 5-year implementation schedule established by the Commission expires shortly and field tests conducted by wireless carriers have established that the vendor claims upon which the rule was premised appear unfounded. No technology has developed that would supply Phase II information with the required accuracy prior to the implementation deadlines established in the Commission's rules.

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[5] 47 C.F.R. § 20.18(h)(1).

[6] *See Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems,* CC Docket No. 94-102, *Memorandum Opinion and Order,* 12 F.C.C.R. 22665, 22723 (1997).

[7] *Id.*; *see Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, *Fourth Memorandum Opinion and Order*, 15 F.C.C.R. 17442, 17451 (2000), *recon. pending* ("*Fourth MO&O*").

It is well established that an agency must reexamine (and should not enforce) a rule which is impossible to satisfy because the factual predicate for the rule simply does not exist.[8] At a minimum, relief from enforcement of the rule (through waivers or otherwise) should be granted where a carrier has made a good faith effort to implement a compliant Phase II E911 solution based on the representations of vendors. As shown below, Cingular has so acted.

B. Location Technologies Did Not Develop In Time To Supply Compliant Location Information On TDMA Networks Prior To October 1, 2001

Cingular has worked extensively to provide E911 services in a timely fashion and has worked productively with a variety of PSAPs to deploy Phase I services. For example, Cingular was the first major CMRS provider to supply Phase I location information to multiple PSAPs in Texas. Cingular also has expended substantial resources in an effort to identify a fully compliant Phase II technology solution, but these efforts proved fruitless.

Cingular's Phase II efforts commenced even before adoption of final E911 rules. Based on the Commission's E911 proposals, Cingular issued a Request for Information ("RFI") in March 1996 to

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[8] *See Bechtel v. FCC*, 957 F.2d 873, 881 (D.C. Cir.), *cert. denied*, 113 S.Ct. 57 (1992), *quoting WWHT, Inc. v. FCC*, 656 F.2d 807, 819 (D.C. Cir. 1981) ("[A]n agency may be forced to re-examine its approach 'if a significant factual predicate of a prior decision . . . has been removed'"); *Alliance for Cannabis Therapeutics v. DEA*, 930 F.2d 936, 940 (D.C. Cir. 1991) ("Impossible requirements imposed by an agency are perforce unreasonable"); *D.C. Transit Sys., Inc. v. Washington Metro. Area Transit Comm'n*, 466 F.2d 394, 402 (D.C. Cir.), *cert. denied*, 409 U.S. 1086 (1972) ("Conditions imposed by [the] agency order are . . . unreasonable by virtue of being impossible to meet"); *cf. Hughey v. JMS Development Corp.*, 78 F.3d 1523, 1530 (11th Cir. 1996), *quoting* Black's Law Dictionary 912 (6th ed. 1990) ("*Lex non cogit ad impossibilia*: The law does not compel the doing of impossibilities").

more than 150 equipment vendors and organizations involved in 911, wireless, and location technology businesses. The RFI sought:

> information about technology, products, systems, hardware, and software and ideas that [Cingular] could employ to provide wireless caller location information for E911 emergency services. This information may relate to current or future offerings, including those under development or in the advanced stages of research.[9]

As a result of the RFI, it became readily apparent that no end-to-end solution existed for providing accurate, detailed location information for 911 calls. Cingular subsequently issued a Request for Quote ("RFQ") to seven network-based location technology vendors in order to "obtain detailed supplier technical, planning, and pricing information" regarding potential Phase II location information.[10] Five vendors responded to the RFQ and provided detailed cost and deployment information. Based on this information and the tests it previously conducted, Cingular concluded that no solution existed for providing Phase II location information for its TDMA networks.

During this same period, Cingular began working with handset vendors, location technology vendors, switch vendors, carriers, and public safety entities to develop an interoperability standard for supplying Phase II E911. Because of the complexity associated with locating a 911 caller and passing it along to the appropriate PSAP in a timely fashion, a uniform standard is required. Through the hard work of all involved, the requisite standard (J-STD-036) was completed and initial publication took place in August 2000. Because it normally takes 18 to 24 months after publication of a complex

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[9] *See* Wireless Location For Enhanced 911 Emergency Services (E911) RFI, at 1 (March 1996) (Attachment B).

[10] BellSouth Cellular/SBC RFQ, Network Solution for E911 Phase II, at 3 (2000) (Attachment C).

standard like J-STD-036 for vendors to develop compliant equipment and have it generally available, it is highly unlikely that vendors could meet an October 2001 equipment delivery date — assuming there was a solution for providing Phase II location information consistent with the Commission's regulations.

Despite the unavailability of an E911 technology standard, Cingular continued its efforts to identify a possible Phase II solution. Since May 1999, Cingular has tested virtually all types of location technologies across most environments.[11] Cingular has conducted or participated in field trials of every different type of location technology available for the GSM and TDMA air interfaces.

Although the results of individual trials are covered under non-disclosure agreements with various vendors, the Wireless Telecommunications Bureau has denied Cingular's request to give these results confidential treatment.[12] Each of the affected vendors was given an opportunity to contest the Bureau's decision, but none did so. Accordingly, Cingular is not requesting confidential treatment of this material. The yield of the test results demonstrated that network-based solutions were *unable* to meet the FCC's accuracy requirements. Moreover, no technology stood out as superior in *overall* performance across *all* environments. Although many technologies performed well in certain environments, none satisfied the FCC's accuracy requirements.

Given the complexity of Phase II location technology tests, it is extremely difficult to describe these results in a summary fashion. What follows is a short description of the technologies tested by

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[11] *See* Declaration of Dr. Andrew W. Clegg at 1 (Attachment E) ("Clegg Declaration").

[12] *Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, *Order* (WTB rel. July 17, 2001).

Cingular. Additional information regarding these tests, including accuracy figures, can be found in Attachment D.

TruePosition. On February 24, 1999, TruePosition reported that its technology satisfied the FCC's accuracy requirements.[13] Three months later, Cingular tested TDOA equipment manufactured by TruePosition in Harris County (Houston), TX. Due to a court order,[14] Cingular cannot disclose these test results. The Commission would have to obtain the results directly from TruePosition.

AT&T also conducted a test of TruePosition's technology under "a typical real-world operating environment representative of [AT&T's] national [TDMA] network" and reported that "[t]he technology tested in this trial failed to meet FCC accuracy requirements for a network-based location system."[15] TruePosition now claims, however, that AT&T's test results are not indicative of the accuracy achievable because the test was conducted some time ago and did not use the most recent version of the technology.[16]

SnapTrack. In July 1999, SnapTrack claimed that its handset-based assisted GPS ("A-GPS") location technology satisfied the Phase II requirements and could provide accuracy within three

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[13] TruePosition *Ex Parte* Presentation, CC Docket No. 94-102 (Feb. 24, 1999).

[14] *Greater Harris County 9-1-1 Emergency Network v. BellSouth Cellular Corp., American Cellular Corp. and Houston Cellular Co.*, Protective Order, No. 99-25658 (Tex. Dist. Ct., Harris County, TX, 165th Jud. Dist., Jan. 21, 2000).

[15] AT&T Wireless Services, Inc., Request for Waiver of the E911 Phase II Location Technology Implementation Rules, CC Docket No. 94-102, TruePosition Test Report at 10 (April 4, 2001) ("AT&T Waiver").

[16] TruePosition *Ex Parte* Presentation, CC Docket No. 94-102, at 1 (May 30, 2001); True-Position *Ex Parte* Presentation, CC Docket No. 94-102, at 1 (July 18, 2001).

to seventy five meters.[17] In December 1999, Cingular tested SnapTrack's technology on a GSM network in Charlotte, NC.[18] A backpack-based system was used to conduct the test because there were, and currently are, no GSM or TDMA handsets available that incorporate SnapTrack's A-GPS technology. The backpack-based system was used to place test calls from a variety of suburban and light urban locations, including indoor and outdoor areas. Although the SnapTrack system performed well in outdoor environments, indoor test results were extremely poor, effectively negating the outdoor results. Indeed, indoor call yield and accuracy were so low that meaningful comparisons with the Commission's accuracy standards could not be tabulated.

SigmaOne. In August and December 2000, Cingular tested TDOA/AOA equipment manufactured by SigmaOne in San Antonio, TX — a TDMA market.[19] Test calls were placed from urban and rural locations around San Antonio. Cingular did not obtain the raw data from the urban test, but SigmaOne's summary of its test results was encouraging. The overall results provided by SigmaOne — including results from rural trials — indicated, however, that this technology could not meet the FCC accuracy requirements for network-based solutions.

Cambridge Positioning Systems. Between July and October 2000, Cingular observed E-OTD trials presented by Cambridge Positioning Systems ("CPS") in Houston, TX.[20] CPS conducted the trials using prototype handsets across a limited network infrastructure and, as a result, Cingular was

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[17] SnapTrack *Ex Parte* Presentation, CC Docket No. 94-102, at 5 (July 2, 1999).

[18] *See* E911 Phase II Trial Results at 11-14 (Attachment D).

[19] *See id.* at 16-18.

[20] *See id.* at 18-19.

unable to observe E-OTD while a call was in progress and the phone was in motion (*i.e.*, a typical mobile scenario). Rather, Cingular was only able to observe E-OTD in motion while the phone was in idle mode. These tests demonstrated that the CPS system was unable to locate an E911 caller within the Commission's accuracy parameters.

U.S. Wireless. In August 2000, Cingular tested U.S. Wireless' RF mapping technology — "RadioCamera" — in Arlington and Alexandria, VA, two cities located within a TDMA market.[21] The RadioCamera technology requires careful calibration and extensive drive testing in order to achieve acceptable results. In its results, U.S. Wireless did not even claim system accuracy for locations within the test area that were more than 30 meters from a calibrated route. In calibrated areas, RadioCamera failed to meet the FCC's Phase II accuracy requirements. As expected, the results obtained from the non-calibrated areas were even worse. Indoor testing was not possible.

Polaris Wireless. In early 2000, Cingular was approached by Polaris Wireless ("Polaris"), formerly PPM, Inc., regarding the use of the Polaris switch-based solution for providing Phase II location information. During the infancy of these discussions, Cingular was informed that Polaris had successfully tested its solution on the GSM networks of Telecom Italia in Turin and Milan, Italy between June and September 2000. These tests produced 237 meter accuracy for 67 percent of calls and 397 meter accuracy for 95 percent of calls in urban environments. In suburban environments, the tests demonstrated 209 meter accuracy for 67 percent of calls and 323 meter accuracy for 95 percent of calls.

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[21] *See id.* at 14-16.

Cingular met with Telecom Italia's research arm, CSELT, to discuss the trials and CSELT confirmed the results. CSELT also lauded the ease of installation associated with Polaris's solution versus other network-based solutions.

In April 2001, Cingular conducted preliminary tests on its GSM network in Pleasanton, California to confirm the potential for Polaris's solution. Early test results were promising and the technology produced location accuracy in the 200-300 meter range for 67% of test calls. Shortly after these tests were completed, for the reasons referenced in its GSM waiver request, Cingular opted to pursue E-OTD for its GSM networks.

Cingular immediately began preparations to test the ability of the Polaris solution on TDMA networks, including the development of a TDMA test methodology. Rudimentary tests designed to validate the test methodology, rather than accuracy, were conducted in Cingular's TDMA market in Detroit during June 2001 ("Detroit Test"). This initial test identified flaws in the test methodology and, because virtually all calls were placed "off-grid," the test did not adequately evaluate the accuracy of the Polaris solution. As a result, this preliminary test produced an accuracy of 632 meters for 67 percent of calls.

Polaris indicated that these results were atypical and requested the opportunity to reprocess the data and identify areas for improvement in the test methodology. Polaris determined that only a small portion of the calibration data was incorporated into their signal strength model. Polaris expressed confidence that once this and other minor modifications were made, its switch-based solution would produce accuracy levels similar to those produced on GSM networks in California and Italy. Based on the recommendations of Polaris and another vendor, the test procedures were modified and a second

test of the Detroit TDMA system commenced on July 24, 2001 ("Second Test"). These tests provided 157 meter accuracy for 67 percent of calls, and 689 meter accuracy for 95 percent of calls.

Cingular recognizes that vendors were telling the Commission a different story — each vendor claiming that *their* specific Phase II location technology would satisfy the FCC's accuracy and deployment requirements. These claims have never substantiated, however, by independent tests conducted in real-world environments. In fact, as demonstrated in Attachment D, tests conducted by Cingular, after the vendors publicly announced that their solutions were compliant, proved otherwise. Moreover, virtually every CMRS carrier subject to the Phase II requirements has indicated that the requirements are impossible to satisfy at this time.[22]

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[22] *See, e.g.,* Leap Wireless International, Inc., Petition for Partial Waiver of E-911 Phase II Implementation Milestones, CC Docket No. 94-102 (Aug. 23, 2001); Pacific Wireless Technologies, Inc., Request for Temporary Waiver, CC Docket No. 94-102 (Aug. 13, 2001); Chicago 20 MHz, LLC, Petition for Limited Waiver of Section 20.18(e)-(h), CC Docket No. 94-102 (Aug. 9, 2001); Conestoga Wireless Company, Inc., Petition for Waiver of E911 Phase II Location Technology Implementation Rules, CC Docket No. 94-102 (Aug. 9, 2001); Cook Inlet, *et al.*, Petition for Waiver of the E911 Phase II Location Technology Implementation Rules, CC Docket No. 94-102 (Aug. 8, 2001); Triton PCS Licenses Company, L.L.C., Petition for Waiver of the E911 Phase II Location Technology Implementation Rules, CC Docket No. 94-102 (Aug. 3, 2001); Inland Cellular Telephone Company, Petition for Limited Waiver of Sections 20.18 (e) and (g) of the Rules, CC Docket No. 94-102 (July 31, 2001); American Samoa License, Inc., Request for Waiver of the E911 Phase II Rules, CC Docket No. 94-102 (July 31, 2001); Sprint PCS, Supplemental Phase II Implementation Report and Request for Temporary and Limited Waiver, CC Docket No. 94-102 (July 30, 2001); Eliska Wireless Ventures License Subsidiary I, L.L.C., Petition for Waiver of the Commission's Rules, CC Docket No. 94-102 (July 26, 2001); ALLTEL Communications, Inc., Petition for Waiver of Sections 20.18(e) and (g) of the Commission's Rules, CC Docket No. 94-102 (July 25, 2001); Verizon Wireless, Inc., Updated Phase II E911 Report and Request for Limited Waiver, CC Docket No. 94-102 (July 25, 2001) ("Verizon Waiver"); Qwest Wireless, LLC and TW Wireless, LLC, Petition for Extension of Time or Waiver of Section 20.18 of the Rules, CC Docket No. 94-102 (July 23, 2001) ("Qwest Waiver"); TeleCorp PCS, Inc., Request for Temporary Waiver of the Commission's Rules for E911 Phase II Enhanced Services, CC Docket No. 94-102 (July 23, 2001); Corr Wireless

(continued...)

The only evidence that compliant Phase II solutions exist are the statements of vendors. Even they, however, dispute the viability of network-based solutions and *vice versa* depending upon the product *they* offer. For example:

- FindComm, Inc. — a wireless location technology company — has described the location technology industry as "offering fragmented and incomplete solutions."[23]
- Motorola, Nokia, and Ericsson have recognized that handset/GPS solutions still require developmental work and have criticized Qualcomm's claims as "skimming over differences in air wireless interfaces, overly generalizing, overstating capabilities, and exaggerating development progress. . . ."[24]
- SnapTrack, Inc. demonstrated that network-based solutions "are not ready, and may be cost-prohibitive."[25]
- Handset vendors have indicated that they will not be developing solutions for TDMA handsets.[26]

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[22] (...continued)
Communications, L.L.C., Petition for Waiver, CC Docket No. 94-102 (June 22, 2001); D&E/Omnipoint Wireless Joint Venture, L.P., Petition for Waiver of the E-911 Phase II Location Technology Implementation Rules, CC Docket No. 94-102 (June 20, 2001); Cincinnati Bell Wireless, LLC, Petition for Waiver of the Phase II Location Technology Implementation Rules, CC Docket No. 94-102 (May 1, 2001); AT&T Waiver; Carolina PCS I Limited Partnership, Petition for Waiver, CC Docket No. 94-102 (Feb. 6, 2001); Hawaiian Wireless, Inc., Petition for Waiver, CC Docket No. 94-102 (Nov. 9, 2000); Nextel Communications, Inc. E911 Implementation Report and Waiver, CC Docket No. 94-102 (Nov. 9, 2000).

[23] FindComm, Inc. *Ex Parte* Presentation, CC Docket No. 94-102, at 1 (Sept. 1, 2000).

[24] Motorola, Nokia, and Ericsson *Ex Parte* Presentation, CC Docket No. 94-102, at 3 (Aug. 18, 2000).

[25] SnapTrack, Inc. *Ex Parte* Presentation, CC Docket No. 94-102 (May 5, 1999); *see* SnapTrack *Ex Parte* Presentation, CC Docket No. 94-102, at 2 (June 2, 1999).

[26] *See* Letter from Michael Flemming, Carrier Strategy Manager, Nokia Mobile Phones, to Jim Sheehan, Director, Equipment and Logistics, Triton PCS (June 8, 2001) (Attachment F) ("Nokia
(continued...)

Carriers, meanwhile, have been unable to substantiate that any location technology will actually provide Phase II location information pursuant to the specifications set forth in Section 20.18.[27]

C. Waivers Must Be Granted Where A Rule Is Impossible To Satisfy

In sum, Cingular has been unable to identify a compliant technology capable of being deployed on TDMA networks prior to October 1, 2001. Thus, the validity of the rule is questionable.[28] The Commission has long recognized that it is "required to reexamine the public interest basis of rules when the basis asserted by the Commission no longer exists."[29] This principle flows from both the Administrative Procedure Act, which requires rules to be supported by a reasoned basis, and the

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[26] (...continued)
Letter"); Letter from Lenny Frucht, Senior Regional Business Manager, Motorola, to Jim Sheehan, Director, Equipment and Logistics, Triton PCS (June 5, 2001) (Attachment F) ("Motorola Letter"); Letter from Robert J. Miklosko, Director, Product Planning, Panasonic, to Jim Sheehan, Director, Equipment and Logistics, TritonPCS (May 30, 2001) (Attachment F) ("Panasonic Letter"); Nokia Comments, CC Docket No. 94-102, at 6 (May 7, 2001); Motorola Comments, CC Docket No. 94-102, at 3-4 (May 7, 2001).

[27] As demonstrated in Cingular's GSM waiver, Cingular and its parents repeatedly urged the Commission to reconsider its Phase II rules and demonstrated that no compliant technology existed. *Cingular Wireless LLC Petition for Limited Waiver of Sections 20.18(e)-(h)*, CC Docket No. 94-102, at 4-7 (filed July 6, 2001) ("Cingular GSM Waiver"). On July 27, 2001, Cingular withdrew the TDMA portion of its request for waiver. *See* "Cingular Wireless Withdraws TDMA Portion of Request for Waiver of E911 Phase II Location Technology Implementation Rules," *Public Notice*, DA 01-1809 (July 27, 2001).

[28] *See Alliance for Cannabis,* 930 F.2d at 940; *D.C. Transit,* 466 F.2d at 402; *Hughey,* 78 F.3d at 1530.

[29] *See Review of the Pioneer's Preference Rules*, ET Docket No. 93-266, *Notice of Proposed Rulemaking*, 8 F.C.C.R. 7692, 7693 n.5 (1993).

Communications Act, which requires a supportable public interest justification.[30] Therefore, the Commission must either revisit the vitality of its E911 rule or grant enforcement relief, such as waivers, to carriers who have acted in good faith to implement a compliant Phase II E911 solution.

II. A WAIVER SHOULD BE GRANTED BECAUSE CINGULAR HAS MADE REASONABLE EFFORTS TO COMPLY WITH THE SPIRIT OF THE PHASE II E911 RULES

AT&T and Cingular both requested waivers of the Commission's Phase II rules and demonstrated that their tests of available technologies, including AT&T's tests of TruePosition's network-based technology, demonstrated that there was no compliant Phase II solution for TDMA networks.[31] TruePosition contested these assertions and noted that the tests of its technology:

- were outdated and did not demonstrate the current capabilities of TruePosition's system;
- were perfunctory in nature; and
- were not conducted on a TDMA network.[32]

TruePosition claims to have improved its solution such that it will locate TDMA callers within "100 meters at the 67th percentile and 190 meters at the 95th percentile."[33] Although this solution may not meet the FCC's accuracy requirements in a particular rural market, TruePosition has indicated that

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[30] *See Bechtel*, 957 F.2d at 881 (stating that "an agency may be forced to reexamine its approach 'if a significant factual predicate of a prior decision . . . has been removed'"); *Geller v. FCC*, 610 F.2d 973, 980 (D.C. Cir. 1979) (stating that "the vitality of conditions forging the vital link between Commission regulations and the public interest is . . . essential to their continuing operation"); *Cincinnati Bell Tel. Co. v. FCC*, 69 F.3d 752 (6th Cir. 1995).

[31] Cingular GSM Waiver at 28-31; AT&T Waiver at 6-7.

[32] TruePosition *Ex Parte* Presentation, CC Docket No. 94-102, at 1 (July 18, 2001).

[33] *Id.* at 2.

it will satisfy the accuracy requirements when Cingular's network is looked at on a composite basis. Moreover, in an effort to eliminate the need for further testing and expedite Phase II deployment on TDMA/AMPS networks, TruePosition has guaranteed that its system will satisfy the FCC's accuracy requirements.[34]

A. Waiver Standard

The Commission's "discretion to proceed . . . through general rules is intimately linked to the existence of a safety valve procedure" such as waivers.[35] Generally, waivers of the Commission's rules will be granted if there are unique or unusual factual circumstances that render application of the rule unduly burdensome or if there is no reasonable alternative.[36] Although waiver applicants generally face a "high hurdle," this hurdle is removed where the underlying basis for a rule is invalid.[37] At a minimum, where the rule cannot be satisfied, a carrier's reasonable attempts to comply warrants enforcement relief.[38]

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[34] *See* Declaration of Joseph W. Sheehan, Vice President, Product Development, TruePositon, Inc. (August 30, 2001) (Attachment G) ("TruePosition Declaration").

[35] *Keller Communications, Inc. v. FCC*, 130 F.3d 1073, 1076 (D.C. Cir. 1997), *quoting WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969).

[36] 47 C.F.R. §§ 1.3, 1.925; *see also Northeast Cellular Telephone Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990), *citing WAIT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir 1969), *cert. denied*, 409 U.S. 1027 (1972).

[37] *See Alltel Corp. v. FCC*, 838 F.2d 551, 561-62 (D.C. Cir. 1988); *National Rural Telecomm. Ass'n v. FCC*, 988 F.2d 174, 181 (D.C. Cir. 1993); *Alenco Communications, Inc. v. FCC*, 201 F.3d 608 (5th Cir. 2000).

[38] It would be arbitrary and capricious to enforce a rule which cannot be satisfied. An irrational rule cannot be saved through waivers. *See* note 37 *supra.*

The courts have required the FCC to clearly articulate the standard used for granting a waiver in a particular case.[39] The Commission appears to have established a three-part standard in granting the first waiver of its Phase II E911 rules:

- Waiver requests should "be specific, focused and limited in scope, and with a clear path to full compliance;"[40]
- Waiver applicants should demonstrate that they will deploy "a solution that comes as close as possible, in terms of providing reasonably accurate location information as quickly as possible"[41] and should document their efforts; and
- Waiver applicants must specify the solutions they considered and explain why none could be employed in a way that complies with the Phase II rules.[42]

Cingular believes that its waiver request satisfies this standard by requesting a waiver to deploy a network-based solution that its vendor claims is fully compliant with the FCC's rules. Cingular has been unable to identify another solution capable of providing a path to full compliance.

B. Waiver Request

Cingular has made a good faith effort to comply with the spirit of the Phase II E911 rules. As discussed above, Cingular has diligently pursued numerous technologies as potential Phase II solutions. Since early 1996, Cingular has:

- worked extensively with PSAPs to timely implement Phase I solutions;

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[39] *See Northeast Cellular Telephone,* 897 F.2d at 1166.

[40] *Fourth MO&O*, 15 F.C.C.R. at 17457-58.

[41] *Id.* at 17458. Cingular believes that the Phase II technologies it has chosen, once deployed, will improve in accuracy over time.

[42] *Id.* at 17457-58.

- issued RFIs and RFQs to vendors, manufacturers, and organizations involved in the E911 process in an attempt to identify viable Phase II solutions;
- actively worked to develop the standards that are a necessary pre-condition to the provision of Phase II location information; and
- conducted or participated in field trials of every different type of location technology available for the GSM and TDMA air interfaces.

Although these efforts indicated that no technological solution existed that was capable of satisfying the Commission's Phase II accuracy requirements and implementation deadlines, TruePosition has guaranteed that its network-based technology will satisfy the Commission's accuracy requirements in all of Cingular's TDMA/AMPS markets. Because attempts to re-test TruePosition's solution at this late junction will further delay deployment of Phase II service, Cingular hereby seeks a waiver that would insulate Cingular from enforcement action if it deploys TruePosition's solution.

Cingular seeks a waiver that would permit it to deploy TruePosition's network-based location technology in markets that utilize the TDMA and/or AMPS air interfaces. In its markets that utilize a different combination of air interfaces (*e.g.*, TDMA/AMPS/UMTS, TDMA/AMPS/GSM, or TDMA/GSM), Cingular plans on deploying (i) a solution that fully complies with the Commission's rules from the outset, (ii) a solution for which Cingular has received prior approval via the waiver

process, or (iii) TruePosition's solution.[43] In markets that only utilize the GSM air interface, Cingular plans on deploying E-OTD.[44]

Immediately upon grant of this request, Cingular will begin implementing TruePosition's solution. Deployment of this technology will require switch modifications, however, which will not be available until after the October 1, 2001 implementation benchmark. Nevertheless, the vendor has guaranteed that its solution will meet the FCC's accuracy requirements and that the solution can be deployed at 2,000 TDMA/AMPS cell sites by December 31, 2002. Such a deployment schedule should satisfy each of the valid PSAP requests that have been received by Cingular to date in TDMA/AMPS markets. Cingular expects that public safety organizations will assist it with prioritizing outstanding requests for Phase II information. After 2002, Cingular will have the capability to supply Phase II information within six months of a valid PSAP request and anticipates that a Phase II solution would be fully deployed in markets that only utilize the TDMA and AMPS air interfaces by late fourth quarter 2004 or early first quarter 2005.[45] Accordingly, Cingular seeks a waiver that authorizes this

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[43] As noted in its previous waiver request, Cingular has decided to convert its TDMA markets to a new air interface. Cingular GSM Waiver at 19. Under the TDMA/AMPS/GSM transition scenario, for example, Cingular would have the flexibility to satisfy its Phase II obligations in those markets by deploying E-OTD (assuming the pending waiver is granted), TruePosition's solution, or another solution that fully complies with the Commission's rules.

[44] *Id.* at 1, 25-28.

[45] This timetable assumes all relevant PSAPs have requested Phase II information from Cingular. Consistent with the Commission's requirements, Cingular will deploy its Phase II technology within six months of PSAP request.

deployment schedule and grants contingent enforcement relief in the event these accuracy or deployment commitments cannot be met.

Choosing a technology for supplying Phase II location information over Cingular's TDMA networks was not an easy task. As TruePosition has noted, "TDMA systems present the most difficult challenges for location technologies of any of the modulation techniques employed by wireless carriers."[46] The public interest will be served by extending the Phase II E911 implementation deadline as proposed, however, because the waiver will permit Cingular to deploy a Phase II solution for its TDMA networks that will serve both its TDMA and analog subscribers. Moreover, the solution will satisfy the FCC's accuracy requirements and will be immediately available to all callers, including roamers. No other technology is capable of providing location information for each of these groups: TDMA callers; analog callers; and roamers. If a waiver is not granted to deploy a network-based technology, Cingular's only other option is the deployment of a less accurate switch-based solution capable of serving only digital callers.

C. TruePosition Has Guaranteed That Its Network-Based Solution Is Capable of Meeting the FCC's Accuracy Requirements

The Commission has mandated that "if no solution is available that fully complies, the carrier [is] expected to employ a solution that comes as close as possible, in terms of providing reasonably accurate location information as quickly as possible."[47] In addressing this mandate, Cingular was mindful of the Commission's statement that:

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[46] TruePosition *Ex Parte* Presentation, CC Docket No. 94-102, at 3 (May 30, 2001).

[47] *Fourth MO&O*, 15 F.C.C.R. at 17458.

> Accuracy is only one of several important means by which locations technologies contribute to the public safety. The rate and extent of deployment, reliability, encouragement of further improvements, and cost are other relevant factors.[48]

Based on all available information, Cingular has concluded that TruePosition's system strikes the best balance of these factors. The proposed solution should meet the Phase II accuracy requirements, but would result in delayed implementation.

1. Accuracy

TruePosition has conducted tests that demonstrate that its network-based technology will satisfy the Phase II accuracy requirements in TDMA/AMPS markets.[49] Cingular has explored other types of solutions, such as switch- and handset-based, but none were capable of meeting the FCC's accuracy requirements. Accordingly, Cingular has chosen to deploy the only type of technology capable of satisfying the Commission's rules on TDMA networks.

2. Speed of Deployment

The full network solutions tested by Cingular required complex, time consuming installations. Initially, Cingular was skeptical that a network-based system could be deployed rapidly enough to warrant a waiver. TruePosition has alleviated these concerns by proposing to deploy its solution on 2,000 sites within Cingular's TDMA/AMPS markets by December 31, 2002. From that point

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[48] *Id.* at 17457.

[49] *See* TruePosition Declaration at 1. These test results were not reported with a 90 percent level of confidence, but were derived using sound statistical and engineering practices. *See* OET Technology Bulletin 71, "Guidelines for Testing and Verifying the Accuracy of Wireless E911 Location Systems," released April 12, 2000. A description of the practices utilized is set forth in Attachment G.

forward, Cingular will be capable of deploying its Phase II solution in its TDMA/AMPS markets in accordance with the FCC rules — within six months of a valid PSAP request. TruePosition's solution will give Cingular the capability to be fully deployed on Cingular's TDMA/AMPS networks by late fourth quarter 2004/early first quarter 2005, dependent upon PSAP requests.

D. Cingular Has No Superior Alternatives

Cingular has evaluated every type of location technology and no technology can be deployed in full compliance with the FCC's rules. Network-based technology appears to be the only technology capable of satisfying the Phase II accuracy requirements for TDMA networks.

1. Switch-Based Location Technology

Given the recognized difficulty associated with Phase II solutions for TDMA networks, Cingular actively pursued switch-based location technology as an interim solution to be deployed during the conversion of Cingular's TDMA networks to a new air interface. Switch-based solutions are a sub-category of network-based solutions that require relatively minor modifications to a network. Switch-based solutions rely on a functionality that is intrinsic to TDMA — the measurement of the strength of signals from the serving cell and neighboring cells.[50] This information is then relayed to the network where software algorithms, which rely on a database comprised of real-world signal strength measurements, are used to determine the caller's location.

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[50] A description of this technology is contained in the Letter from Mikael Stromquist, Vice President and Chief Technical Officer, Ericsson, to Bobby K. Adams, Executive Director — Intelligent Networks Products and Services, Cingular Wireless LLC (June 27, 2001) (Attachment F) ("Stromquist MNLS Letter").